

METHOD FOR CREATING A SELF- ALIGNED SOI DIODE BY REMOVING A POLYSILICON GATE DURING PROCESSING

Abstract

A method of forming a self-aligned SOI diode, the method comprising depositing a protective structure over a substrate; implanting a plurality of diffusion regions of variable dopant types in an area between at least one pair of isolation regions in the substrate, the plurality of diffusion regions separated by a diode junction, wherein the implanting aligns an upper surface of the diode junction with the protective structure; and removing the protective structure. The method further comprises forming a silicide layer over the diffusion regions and aligned with the protective structure. The protective structure comprises a hard mask, wherein the hard mask comprises a silicon nitride layer. Alternatively, the protective structure comprises a polysilicon gate and insulating spacers on opposite sides of the gate. Furthermore, in the removing step, the spacers remain on the substrate.